

Listing of Claims:

1. (Currently Amended) An irrigation controller comprising:
a memory that stores a regression model;
a microprocessor that applies a current value for an environmental factor to the regression model to ~~estimate~~ recalculate a current evapotranspiration rate (estimated ETo),
the regression model running with optional ~~or without~~ input from a local sensor;
~~and a mechanism that uses with the irrigation controller using~~ the estimated ETo to
affect calculate determine an irrigation schedule executed by the controller; and
wherein the regression model is based upon a set of historical ETo values and a set of
corresponding historical values for the environmental factor.
2. (Original Canceled) The controller of claim 1 wherein the regression model is based upon
a set of historical ETo values and a set of corresponding historical values for the
environmental factor.
3. (Original) The controller of claim 1 wherein the set of historical ETo values spans a time
period of at least two days.
4. (Original) The controller of claim 2 wherein the regression model is further based upon a
second set of historical values for a second environmental factor.
5. (Original) The controller of claim 2 wherein the regression model comprises a linear
regression.
6. (Original) The controller of claim 2 wherein the regression model comprises a multiple
regression.
7. (Original) The controller of claim 1 wherein the environmental factor is temperature.
8. (Original) The controller of claim 1 wherein the environmental factor is solar radiation.
9. (Original) The controller of claim 1 wherein the environmental factor is wind speed.

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10. (Original) The controller of claim 1 wherein the environmental factor is humidity.
11. (Original) The controller of claim 1 wherein the environmental factor is barometric pressure.
12. (Original) The controller of claim 1 wherein the environmental factor is soil moisture.
13. (~~Currently Amended~~Original) The controller of claim 2 wherein the environmental factor is selected from the ~~a~~ group consisting of temperature, solar radiation, wind speed, humidity, barometric pressure, and soil moisture.
14. (~~Currently Amended~~Original) An irrigation system comprising an irrigation controller according to claim 1, and ~~said~~ a local sensor, which ~~that~~ provides a signal corresponding to the value for the environmental factor.
15. (Original) An irrigation system comprising an irrigation controller according to claim 1, and a receiver that receives from a distal source a signal corresponding to the value for the environmental factor.

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